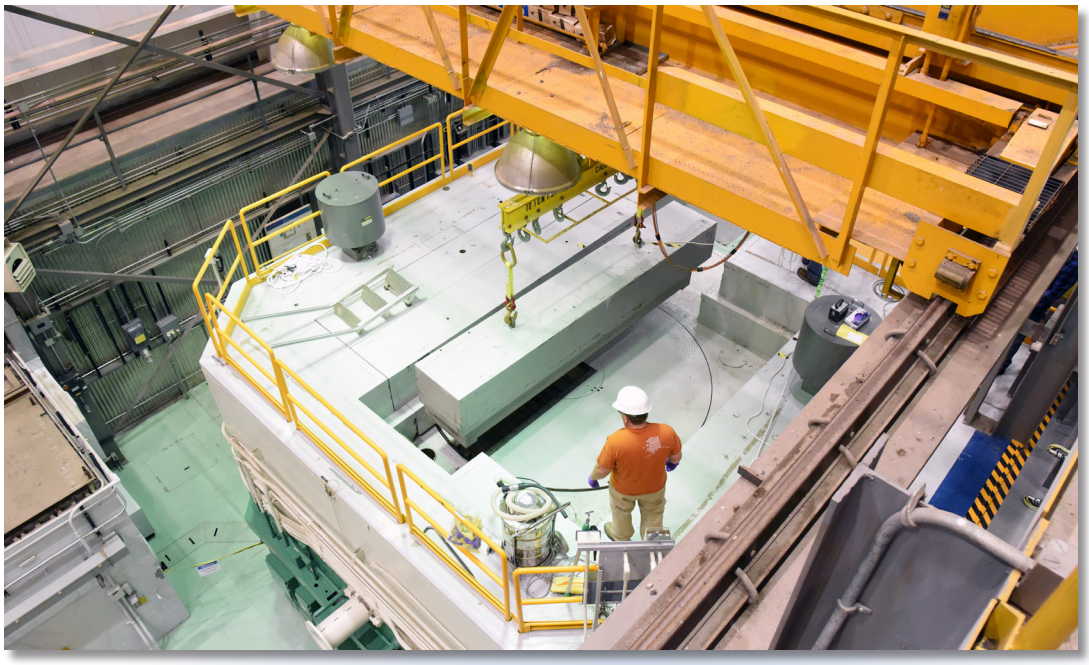

Engineers, technicians and scientists work to thoroughly inspect components to prepare for resumption of reactor operations.

Resume Transient Testing and Restart the Transient Reactor Test Facility

Transient testing is a critical part of nuclear research and development needed to create advanced nuclear reactors and fuels. Along with steady-state testing and post-irradiation examination capabilities available at other Idaho National Laboratory facilities, testing at the Transient Reactor Test (TREAT) facility helps to advance INL's research and development mission and its role as the lead nuclear energy lab. Transient testing is vital for development of accident tolerant fuels and advanced nuclear reactors, and can aid in other aspects of developing nuclear power as a clean, sustainable, baseload energy source.

In searching for the best and most cost-effective response to a global need for transient testing, restarting TREAT was determined by the U.S. Department of Energy to be the best option. Other options were evaluated,

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The TREAT Reactor Control Station monitors and controls reactor performance during operations.

The Energy of Innovation

INL Idaho National Laboratory

The Transient Reactor Test Facility is located 32 miles west of Idaho Falls, Idaho, near Idaho National Laboratory's Materials and Fuels Complex.

For more information

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including the restructuring of a smaller, less capable DOE facility, or construction of a new reactor. TREAT was the best of these options based on cost, flexibility, existing capability, and the adaptability of the facility's design. The outstanding maintenance and operational refurbishments performed prior to the reactor's standby status and continuous utilization of the facility have assisted the progress of the restart process.

TREAT is a highly capable reactor with a distinctive air-cooled design that can accommodate multipin test assemblies. The design allows for real-time monitoring of experiments via the hodoscope, a system that enables in-situ analysis of fuels and materials interactions within a test sample.

TREAT began operations in the spring of 1959 and underwent extensive upgrades in 1988. The reactor was placed in safe standby mode in 1994 but the facility remained active, supporting other nuclear research and development missions in the interim. TREAT's unique design, as well as a strong standby maintenance program, made it possible to cost-effectively restore INL's transient test capability. Development of advanced instrumentation and experiment refurbishments will further expand TREAT's capability, including refurbishments to the hodoscope, digital tomography and others.

The Resumption of Transient Testing Program is making rapid progress on restoring a vital component to nuclear energy development. The transient tests supplied by the TREAT facility are an essential element of the INL's lead nuclear research mission in support of the United States and international efforts to develop robust and safer fuels, and to bring innovative reactor technologies to the market.

The TREAT facility is equipped with one-of-a-kind instruments like the hodoscope, which allow real-time observation of transient experiments in progress, and a neutron radiography capability.